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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,836	12/08/2003	Kushagra Vaid	42339-192083	9261
26694	7590	07/02/2007		
VENABLE LLP P.O. BOX 34385 WASHINGTON, DC 20043-9998			EXAMINER MEHRMANESH, ELMIRA	
			ART UNIT 2113	PAPER NUMBER
			MAIL DATE 07/02/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/728,836

Applicant(s)

VAID ET AL.

Examiner

Elmira Mehrmanesh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5,6,8-10 and 13-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,8-10 and 13-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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### **DETAILED ACTION**

This action is in response to an RCE filed on March 27, 2007 for the application of Vaid et al., for a "Poisoned error signaling for proactive OS recovery" filed December 8, 2003.

Claims 1-3, 5, 6, 8-10, and 13-27 are pending in the application.

Claims 1-3, 5, 6, 8, 13-17, and 20-27 have been amended.

Claims 4, 7, 11 and 12 have been cancelled.

Claims 1-3, 5, 6, 8-10, and 13-27 are rejected under 35 USC § 102.

#### ***Claim Rejections - 35 USC § 101***

In view of the Applicant's amendments, the rejection of claims 21-27 under 35 USC § 101 has been withdrawn.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 5, 6, 8-10, and 13-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Schultz et al. (U.S. Patent No. 6,948,094).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it

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constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per claim 1, Schultz discloses a method of addressing data errors in a computer system (Fig. 3), comprising:

pre-determining a software-programmable data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), to control actions to be taken based on different classes of data poisoning events (col. 17, lines 58-61, *data poisoning*)

error-checking a unit of data (Fig. 3); detecting an uncorrectable error in the unit of data (col. 15, lines 1-6)

if the uncorrectable error is detected in the unit of data, based on the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), determining if the detected uncorrectable error is a data poisoning event (col. 17, lines 58-61, *data poisoning*)

marking the unit of data containing a data poisoning event with a software-visible bit (col. 15, lines 1-6)

determining, based on the pre-determined data poisoning policy (col. 17, lines 58-61, *data poisoning*), if the unit of data containing the poisoning event is to be acted upon (col. 17, lines 10-15, *OS error handling policy*)

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detecting by an operating system the software-visible bit in the data unit (col. 15, lines 1-6) and in accordance with the detected software-visible control bit and the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), acting, by the operating system of the computer system to address the presence of the uncorrectable error data in the unit of data (Fig. 3, elements 316, 318), wherein the operating system is not always brought down (col. 4, lines 5-10).

As per claim 2, Schultz discloses applying error-control decoding to the unit of data (col. 15, lines 1-6).

As per claim 3, Schultz discloses correcting any correctable errors in the unit of data (Fig. 3, elements 316, 318).

As per claim 5, Schultz discloses wherein acting to address the presence of the uncorrectable error comprises: removing the unit of data including the uncorrectable error from use by the operating system (col. 17, lines 58-61).

As per claim 6, Schultz discloses recovering the unit of data (Fig. 3, elements 316, 318).

As per claim 8, Schultz discloses if the operating system detects the software-visible bit (col. 15, lines 1-6), the presence of said indication that the unit of data contains a data poisoning event (col. 17, lines 58-61, *data poisoning*),

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determining if the unit of data is in user space (col. 18, lines 17-18); if the unit of data is in user space, terminating an application running on the computer system and removing the unit of data from use by the operating system (col. 18, lines 27-67).

As per claim 9, Schultz discloses upon detection of an uncorrectable error in said unit of data, providing information to said operating system to enable recovery of said unit of data (col. 17, lines 1-9).

As per claim 10, Schultz discloses the information includes a target address corresponding to said unit of data (col. 18, lines 27-67).

As per claim 13, Schultz discloses said detecting is performed by at least one of a processor or a memory (Fig. 3).

As per claim 14, Schultz discloses a computer system comprising:  
a software-programmable data poisoning policy to control actions (col. 17, lines 10-15, *OS error handling policy*) to be taken based on different classes of data poisoning events (col. 17, lines 58-61, *data poisoning*)

a processor (Fig. 1, element 100)

at least one error control decoding implementation (Fig. 3) including at least one of an error-control decoder (col. 3, lines 3-12), a software to implement error-control decoding by the processor, or a firmware to implement error-control

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decoding in conjunction with the processor (col. 2, lines 14-41), adapted to process units of data and to detect if a unit of data contains at least one uncorrectable error (col. 11, lines 5-10)

a module to run on said processor to determine (Fig. 2), based on the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), if said uncorrectable error is a data poisoning event (col. 17, lines 58-61, *data poisoning*) and (col. 11, lines 5-10), and, if so, to mark a unit of data containing said uncorrectable error (col. 15, lines 1-6)

an operating system to run on said processor (Fig. 2), the operating system to determine, based on the pre-determined data poisoning policy, if a particular data poisoning event is to be acted upon or not (col. 17, lines 10-15, *OS error handling policy*), the operating system adapted to detect the marked unit of data and to act to mitigate the detected uncorrectable error (col. 11, lines 5-10) without always bringing down the operating system upon detection of the marked unit of data (col. 4, lines 5-10).

As per claim 15, Schultz discloses a memory coupled to said error control decoding implementation (col. 3, lines 3-12) wherein the error-control decoding implementation is adapted to process units of data stored in the memory (col. 9, lines 36-50).

As per claim 16, Schultz discloses wherein said memory comprises: a processor cache (col. 9, lines 36-50).

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As per claim 17, Schultz discloses at least one bus coupled to said error-control decoding implementation (col. 3, lines 3-12) wherein the error-control decoding implementation is adapted to process units of data passing through the bus (col. 9, lines 66-67 through col. 10, lines 1-12).

As per claim 18, Schultz discloses logic adapted to control signaling of information relating to one or more uncorrectable data errors (col. 11, lines 5-24).

As per claim 19, Schultz discloses the logic comprises: programmable logic (col. 11, lines 5-24).

As per claim 20, Schultz discloses the information includes a target address corresponding to a unit of data containing the detected uncorrectable error (col. 19 TABLE C, Target\_Address\_Valid\_Bit).

As per claim 21, Schultz discloses a physical machine-accessible storage medium containing software code (col. 2, lines 14-41) that, when read by a computer, causes the computer to perform a method comprising:

pre-determining a software-programmable data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), to control actions to be taken based on different classes of data poisoning events (col. 17, lines 58-61, *data poisoning*)  
error-checking a unit of data (Fig. 3)



if an uncorrectable error is detected in the unit of data, based on the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), determining if the detected uncorrectable error is a data poisoning event (col. 17, lines 58-61, *data poisoning*)

and if so, marking the unit of data containing a data poisoning event with a software-visible bit (col. 15, lines 1-6)

determining, based on the pre-determined data poisoning policy (col. 17, lines 58-61, *data poisoning*), if the unit of data containing the poisoning event is to be acted upon (col. 17, lines 10-15, *OS error handling policy*)

and if so, detecting by an operating system of the computer, the software-visible bit in the unit of data (col. 15, lines 1-6)

and in accordance with the detected software-visible control bit and the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), acting, by the operating system of the computer to address the presence of the uncorrectable error data in the unit of data (Fig. 3, elements 316, 318), wherein the operating system is not always brought down (col. 4, lines 5-10).

As per claim 22, Schultz discloses if the operating system detects the software-visible bit (col. 15, lines 1-6), determining if the unit of data is in user space (col. 18, lines 17-18); if the unit of data is in user space, terminating an application running on the computer system and removing the unit of data from use by the operating system (col. 18, lines 27-67).

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As per claim 23, Schultz discloses wherein said acting upon the presence of the uncorrectable error comprises: removing the unit of data from use by the operating system (col. 17, lines 58-61).

As per claim 24, Schultz discloses a computer system comprising: a processor (Fig. 1, element 100) and a physical machine-accessible storage medium to be coupled to the processor, the processor to access the machine-accessible storage medium and to execute software code stored on the machine-accessible storage medium (col. 2, lines 14-41), to cause the computer system to perform a method comprising:

pre-determining a software-programmable data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), to control actions to be taken based on different classes of data poisoning events (col. 17, lines 58-61, *data poisoning*)

error-checking a unit of data (Fig. 3)

if an uncorrectable error is detected in the unit of data, based on the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), determining if the detected uncorrectable error is a data poisoning event (col. 17, lines 58-61, *data poisoning*)

and if so, marking the unit of data containing a data poisoning event with a software-visible bit (col. 15, lines 1-6)

determining, based on the pre-determined data poisoning policy (col. 17, lines 58-61, *data poisoning*), if the unit of data containing the poisoning event is to be acted upon (col. 17, lines 10-15, *OS error handling policy*)

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and if so, detecting by an operating system of the computer, the software-visible bit in the unit of data (col. 15, lines 1-6)

and in accordance with the detected software-visible control bit and the pre-determined data poisoning policy (col. 17, lines 10-15, *OS error handling policy*), acting, by the operating system of the computer to address the presence of the uncorrectable error data in the unit of data (Fig. 3, elements 316, 318), wherein the operating system is not always brought down (col. 4, lines 5-10).

As per claim 25, Schultz discloses if the operating system detects the presence software-visible bit, determining if the unit of data is in user space (col. 18, lines 17-18); if the unit of data is in user space, terminating an application running on the computer system and removing the unit of data from use by the operating system (col. 18, lines 27-67).

As per claim 26, Schultz discloses wherein said acting upon the presence of the uncorrectable error comprises: removing the unit of data from use by the operating system (col. 17, lines 58-61).

As per claim 27, Schultz discloses at least one bus (col. 4, lines 60-65) to couple the processor with the machine-accessible storage medium (col. 2, lines 14-20).

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***Response to Arguments***

Applicant's arguments filed March 27, 2007 with respect to claims 1, 14, 21, and 24 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elmira Mehrmanesh whose telephone number is (571) 272-5531. The examiner can normally be reached on 9-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W. Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SCOTT BADERMAN  
SUPERVISORY PATENT EXAMINER